Figure 2a is a schematic view of another culturing device constructed in accordance with the teachings of the invention;

Figure 2b is an enlargement of the device taken from circle 2b in Figure 2a;

B1 cont

Figure 3 is a top view of another culturing device constructed in accordance with the teachings of the invention and utilizing a number of culture modules placed parallel to one another, each having a number of culture containers;

Figure 4a is a longitudinal section taken along line IV-IV through a culture module of the culturing device shown in Figure 3;

Figure 4b is an enlargement of the device taken from circle 4b in Figure 4a;--.

Please delete the last full paragraph at page 5, lines 28-31, and substitute a new paragraph as follows:

B2

Referring now to the drawings, Figure 1a illustrates an entire culture unit 10 having a culture container 12. The illustrated culture unit 10 is generally in the form of an inverted bottle. The upper end of the culture unit 10 defines a circular opening 14.

Please delete the paragraph bridging pages 5 and 6, and substitute a new paragraph as follows:

B3

A cell culture insert 15 is placed inside the culture container 12 and is produced from a porous synthetic material, such as for example, polyethylene terephthalate. The cell culture insert 15 has a liquid-permeable carrier structure or membrane 16, which can be produced from the different synthetic materials, depending on the requirements of the cells to be cultured, again such as for example, polyethylene terephthalate. As is shown in Figure 1b taken from the enlarged portion of Figure 1a, the membrane 16 supports and carries a cell culture 18.

Please delete the first full paragraph at page 6, lines 5-7, and substitute a new paragraph as follows:

B4

The culture container 12 is carried by a holding device 20. The structure of the device 20 can vary considerably and is therefore only indicated schematically in Figure 1a.

Please delete the second to last paragraph at page 6, lines 15-27, and substitute a new paragraph as follows:

Two control terminals of the pump 24 are respectively connected through power amplifiers 32 and 34 to the outputs of an operating circuit 36. The operating circuit 36 produces a signal at a first, a second or neither of its outputs in order to actuate the pump 24. The pump can introduce additional culture liquid from the storage container 28 to the inside of the culture container 12 or can remove culture liquid from the inside of the culture container 12 and return it to the storage container 28. The pump function depends on the output signal of a continuously operating level sensor 38 that is shown as a sensor mounted to the outside surface of the culture container 12. Alternatively, the sensor can also be mounted on the inside surface of the culture container 12. The sensor 38 can be an optical sensor in practice and operate as a function of a target value transducer 40, which is shown as an adjustable resistor. The target value transducer 40 can be adjusted by a programmed controller 42 as indicated in Figure 1a by a dotted line.

B5

Please delete the first two paragraphs at page 7, lines 1-7, and substitute new paragraphs as follows:

The target value transducer 40 is switched to the second position by the programmed controller 42 to correspond to a liquid level shown in Figure 1a by the dotted line 44. In this position, the liquid level is above the peaks of the cell culture 18. This condition is a submerged nutrient supply system.

B6

A practical example shown in Figure 2a corresponds largely to the example shown in Figure 1a. The corresponding components have the same reference number and will not be explained further in detail.

Please delete the first paragraph at page 8, lines 1-8, and substitute a new paragraph as follows:

The supply lines 62 of the various culture modules 58 are each connected through tubing 64 to a corresponding discharge connector 66 of a culture medium distribution system 68. The tubing 64 is shown only schematically in Figure 3, and can optionally be produced

B7

from a material such as silicone. The culture medium distribution system 68 is connected to a supply of culture medium by a supply connector 70. Similar to the practical examples shown in Figures 1a and 2a, the supply connector 70 is connected to the discharge of a culture medium pump 24 or 24', also with conventional tubing such as silicone tubing (not shown).

B7 cont

Please delete the first full paragraph at page 11, lines 5-16, and substitute a new paragraph as follows:

In Figures 1a and 2a, the cell culture inserts 15 are shown schematically as being incorporated as part of the container 12 substrates in order to simplify the drawings. However, in practice, the cell culture inserts 15 are preferably not fixed in the culture containers 12, but rather are preferably discrete parts that can be removed from the containers. As indicated in Figure 4 for a culture container 12, a commercial cell culture insert 122 can be in the shape of a cylindrical beaker with a flat bottom wall 124 and a cylindrical peripheral wall 126. By placing the cell culture inserts 122 into the culture container 12 and securing or supporting them with the aid of the glass bridges 57, the various bottom walls 124 can be assured to lie in a common horizontal plane. The cell culture inserts 122 may optionally be made of a porous synthetic material as can the cell culture inserts 15 in Figures 1a and 2a.

B8

Please delete last full paragraph at page 13, lines 13-16, and substitute a new paragraph as follows:

A culturing device is shown in Figures 3 to 7 with its own temperature-control device. However, the device of Figures 3 to 7 can be provided without temperature-control, similar to the culturing devices shown in Figures 1a and 2a. Such a device can simply be placed into a temperature-control cabinet.

B9
